

## Chapter 3

# Tactical Reconnaissance

Engineers are active participants in recon operations that provide both maneuver and engineer commanders with information about the terrain, enemy engineer activity, obstacles, and weather effects within an AO. A tactical recon normally takes place in a high-threat environment. During a recon, engineers may assist maneuver units or scouts in reconning the terrain to determine its effect on maneuverability and the enemy situation. When the enemy is located, the engineers help determine his strengths and weaknesses with a focus on enemy engineer activities and obstacles. A recon team provides the information necessary to allow combined-arms forces to maneuver against the enemy, attack him where he is most vulnerable, and apply overwhelming firepower to destroy him. An engineer recon team ensures that the combined-arms forces have the freedom to maneuver and the knowledge of where they will encounter enemy obstacles. This chapter provides basic information on recon operations. Its focus is on providing the engineers the information needed to allow them to integrate into a maneuver force's recon effort. Although this information is most pertinent to tactical recon missions, the methods discussed should also be used by squads, platoons, and companies when conducting technical recons.

## PURPOSE AND FUNDAMENTALS

A tactical recon is conducted to gain information forward of friendly lines or to provide current, accurate information about terrain, resources, obstacles, and the enemy within a specified AO. This information provides the follow-on forces with an opportunity to maneuver to their objective rapidly. Engineer recon teams are involved in three types of tactical recon: route, zone, and area. During a tactical recon, engineers may also be involved in various technical recons such as road, tunnel, and bridge recons.

There are six fundamentals common to all successful tactical recon operations. Every engineer leader should keep these fundamentals in mind when planning and executing recon missions.

- Using maximum recon force forward. During a recon, every scout, every engineer, and every pair of eyes make a difference. Engineer recon teams must not be kept in the reserve. They must be employed, executing their portion of recon tasks as soon as possible.
- Orienting on the recon objective. A recon team's scheme of maneuver is focused toward a specific objective or a set of objectives. An engineer recon team must know where to look for enemy obstacles and enemy engineer activity at the objective. The objective may be a terrain

feature, a specific area, or an enemy force; it may be designated by an NAI, a checkpoint, or an objective symbol. A recon team must maintain its orientation toward the objective until the mission is complete. The overall objective for an engineer recon team's mission is located in the supported commander's priority intelligence requirements (PIR), the R&S plan, and/or the commander's intent paragraph in the operations order (OPORD). It is critical that all recon personnel understand the purpose of a recon mission.

- Reporting all information rapidly and accurately. Commanders base their decisions and plans on the battlefield information that scouts, engineers, and other recon assets find and report. Information loses value over time. Scouts and engineers must report all information exactly as they see it and as fast as possible. They must never assume, distort, or exaggerate; inaccurate information is dangerous. Information that an enemy or an obstacle is not in a certain location is just as important as where the enemy or obstacle is.
- Retaining freedom of maneuver. All recon elements must be able to maneuver on the battlefield. If a recon element is fixed by the enemy, the element must regain its ability to maneuver or it can no longer accomplish its mission. Recon teams must continually maintain an awareness of tactical developments. They must employ proper movement techniques and react to unexpected situations appropriately. When contact is made, the recon team leader must develop the situation and retain the initiative and the ability to continue the mission.
- Gaining and maintaining enemy contact. Recon elements employ sound tactical movement, target-acquisition methods, and appropriate actions to make contact with an enemy, undetected, thereby retaining the initiative and control of the situation. Recon elements use the terrain and weather to their advantage to avoid detection. Examples include selecting covered and concealed routes, moving during rain, avoiding roads and danger areas, and selecting unlikely routes to their objectives. Once scouts find the enemy, they maintain contact using all available means (sensors, radar, sound, and visual) until the commander orders them to do otherwise or as required by their specific instructions.
- Developing the situation rapidly. Whether recon elements detect an obstacle or the enemy, they must analyze the situation quickly. If they detect the enemy, the recon elements determine the enemy's size, composition, and activity and locate the enemy's flanks. Scouts and engineers find any obstacles protecting the enemy's position. The engineers (with scout assistance) find and mark a bypass, perform an unopposed obstacle reduction, or conduct a detailed obstacle recon. It is imperative that any reduction/marketing does not jeopardize the recon effort. It is also important that the engineers gain enough detail about the obstacle for future breaching operations. This must be done quickly with minimum guidance from higher headquarters. During a recon, time is a precious resource; it cannot be wasted if mission success is to be achieved.

## RECON TECHNIQUES

Recon techniques achieve a balance between the acceptable level of risk and the security necessary to ensure mission accomplishment. This balance is often a tradeoff between speed and security. The faster the recon, the more risk a recon team accepts and the less detailed recon it conducts. A recon team must use all available resources when conducting its mission. The primary tools for any engineer recon team are its senses—particularly, sight, hearing, touch, and smell. Recon equipment supplements and complements these senses. The following are some examples of how these senses are used during recon missions:

- Sight. An engineer recon team looks for—
  - Evidence of digging activities, including fighting positions and tank ditches.
  - Movement or activity of enemy engineer vehicles.
  - Indications of buried mines.
  - Emplaced demolition charges on bridges, tunnels, and so forth.
  - Obstacle orientation, depth, composition, and width.
  - Enemy vehicles and aircraft.
  - Helicopter landing zones (LZs).
  - Sudden or unusual movement.
  - Smoke or dust.
  - Engine exhaust fumes.
  - Unusual movement of farm or wild animals.
  - Activity of the local populace.
  - Vehicle tracks.
  - Signs or evidence of enemy occupation.
  - Recently cut foliage or vegetation.
  - Lights, fires, or reflections.
  - Muzzle flashes.
- Hearing. An engineer recon team listens for—
  - Vehicle sounds indicating construction of survivability positions.
  - Exploding demolition charges.
  - Running engines.
  - Track sounds.
  - Voices.
  - Metallic sounds, especially sounds indicating wire emplacement.
  - Gunfire sounds (by type of weapon).

- Unusual calm or silence.
- Dismounted movement through brush or woods.
- Helicopter rotors.
- Touch. An engineer recon team feels for the presence of trip wires or AHDs.
- Smell. An engineer recon team smells for—
  - Cooking food.
  - Vehicle exhaust.
  - Burning petroleum, oils, and lubricants (POL).
  - Decaying food or garbage.

To reduce vulnerability on the battlefield, an engineer recon team rehearses recon techniques in detail. The knowledge and rehearsal of recon techniques, combined with an understanding of a mission's particular METT-T requirements, allow the recon team leader to mix and choose the methods that maximize security and mission accomplishment.

This section discusses several recon methods that have proven to be effective in most situations. They form the foundation for tactical recon. Use common sense when analyzing a given situation and employing or modifying the method based on METT-T.

## **MOUNTED RECON**

Maneuver units frequently employ mounted recons. A fairly detailed recon can be conducted while maintaining speed and momentum. Normally, a mounted recon is used when—

- Time is limited.
- Long distances must be traveled.
- A very detailed recon is not required.
- Enemy locations are known.
- Enemy obstacles are known or not expected.
- Enemy contact is not likely.

In addition to speed, a mounted recon offers the advantages of a tactical vehicle. These advantages depend on the vehicle employed, but they can include firepower, armor protection, increased navigational aids, communication capabilities, and thermal optics. Recon teams must dismount and recon forward of their vehicles to provide security before moving through dangerous areas such as open areas, hilltops, curves, wadis, or other blind spots on the battlefield. Disadvantages include the loss of stealth due to the vehicle's visual, noise, and thermal signatures and the loss of some detail because of restricted vision and impairment of the senses of smell and hearing. These disadvantages increase the risk to personnel as they conduct a recon.

## **DISMOUNTED RECON**

A dismounted recon's primary purpose is to obtain detailed information about terrain features, obstacles, or enemy forces. Engineer recon teams normally conduct a dismounted recon. A dismounted recon is conducted when—

- A detailed recon is required.
- Stealth is required.
- Enemy contact is expected or visual contact has been achieved.
- Vehicle movement through an area is restricted by terrain.
- Time is not limited.
- Security is the primary concern.

Recon teams set up short- or long-duration observations posts (OPs). Dismounted personnel must provide security for each other when moving. They should work together in pairs when operating dismounted. When only one person dismounts, he should never move out of supporting distance of the vehicle.

As a minimum, a recon team should carry the following when dismounted:

- SOPs, to include templated information on anticipated obstacles.
- Personal weapons.
- Communications equipment.
- Signal operating instructions (SOI) extracts.
- Maps.
- A compass.
- Binoculars (night-vision devices [NVDs], if necessary).
- Seasonal uniform and load-bearing equipment.
- A global positioning system (GPS).
- Radios.

## **RECON BY FIRE**

In a recon by fire, a recon element places direct/indirect fire on positions where there is a reasonable suspicion of enemy occupation. The goal is to cause an enemy to disclose his presence by moving or returning fire. Recon elements conduct a recon by fire when enemy contact is expected and time is limited or when they cannot maneuver to develop the situation. This method eliminates any element of surprise the scouts may have had, and it is likely to give the enemy detailed knowledge of their location. However, it may reduce the chance of being ambushed within established kill zones. Recon by fire does not work in all cases. For example, disciplined troops in prepared positions will not react to the scout's fires. Examples of situations in which a recon by fire may be employed include—

- The presence of a natural or man-made obstacle.

- The existence of an obvious kill zone.
- A suspected enemy position that fits the SITE MP.
- Signs of recent activity (tracks, marks, or trash).
- Bunker complexes that may or may not be occupied.

When such evidence exists, the scouts should maneuver to observe from different directions. When the decision is finally made to conduct a recon by fire, weapons should be used in the following priority:

- Indirect fire.
- Dismounted machine gun.
- 25-millimeter (mm) chain gun, MK19, and mounted machine gun.
- Tube-launched, optically tracked, wire-guided missile (TOW).

Engineer recon teams do not normally provide a key weapon system during a recon by fire. They are better employed as an observation asset to the firing team.

A recon by fire does not mean indiscriminately using direct and indirect fires at all wood lines and hilltops in the hopes of causing the enemy to react. The enemy will recognize this for what it is; he will not react to it. This also wastes valuable ammunition.

### **Indirect Fire**

Scouts can employ recon by indirect fire (see Figure 3-1). This technique provides them security because they do not disclose their exact position, and they are all available to observe the effects of fire.

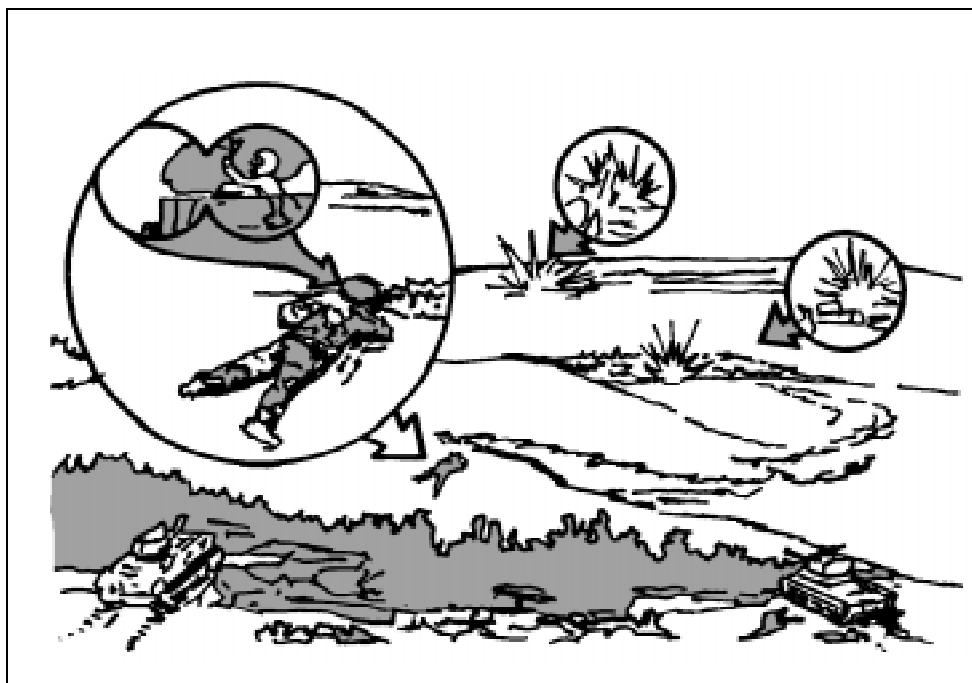
A recon by indirect fire has disadvantages as well. Indirect fire requires more coordination and communication than direct fire. Indirect fire is subject to considerations beyond a recon team's control such as the supporting unit's Class V supply status, counterbattery threats, and command approval. Also, the effects of indirect fire may obscure a scout's vision.

### **Direct Fire**

Scouts can use their organic weapons to place accurate direct fires on suspected enemy positions. This technique is likely to provoke a rapid enemy response, but it reveals the scout's position. Scouts must work together when employing direct fire. A scout who fires is normally not in the best position to observe because of obscurity and the necessity to move to a covered and concealed position after firing. Another scout must observe for an enemy reaction. The recon leader should also plan on placing indirect fires on suspected positions for use as suppression if the enemy responds in strength.

### **AERIAL RECON**

An aerial recon is not normally available except in division cavalry organizations or when supporting an armored cavalry regiment. When available, however, an aerial recon can be employed to complement and augment a ground recon. An aerial recon, as conducted by air-cavalry elements, is the fastest form of recon. It is also terrain-independent and thus



**Figure 3-1. Recon by indirect fire**

able to access areas that may be difficult or impossible for ground scouts to reach.

The advantage gained by employing air-cavalry assets is multifaceted and flexible enough to accommodate a broad range of ideas and missions. Refer to FMs 1-114 and 17-95-10 for more complete information.

#### **STEALTH VERSUS AGGRESSIVE RECON**

The recon team will use either aggressive or stealth recon techniques, based on METT-T. A stealth approach is time-consuming and emphasizes avoiding contact and engaging the enemy. To be effective, a stealth approach must rely on a dismounted recon and maximum use of covered and concealed terrain. An aggressive recon emphasizes the rapid identification of the enemy's combat power and is characterized by a mounted recon and a recon by fire.

#### **ROUTE RECON**

Maneuver units or scouts, augmented by engineers, conduct a route recon to gain detailed information about a specific route and the terrain on both sides of the route that the enemy could use to influence movement. When the commander wants to use a specific route, a maneuver unit or scout platoon with an engineer recon team conducts a route recon. This ensures that the route is clear of obstacles and enemy forces and that it will support his vehicles' movements. Engineers supporting division cavalry squadrons and armored cavalry regiments will routinely support these units in route recon missions.

**CRITICAL TASKS**

During a route recon, a recon element must accomplish a specified number of tasks unless directed to do otherwise. Based on time available and the commander's intent, the recon element may be directed to conduct a route recon to acquire specific information only. The recon leader must clearly understand which of the following critical tasks must be accomplished:

- Determining the route's trafficability. (For further information see Chapter 5.)
- Reconning to the limit of direct-fire range and terrain that dominates the route.
- Reconning all built-up areas along the route (includes identifying bypass routes, construction supplies and equipment, ambush sites, evidence of booby traps, and suitable sites for C<sup>2</sup>/CSS facilities).
- Reconning all lateral routes to the limit of direct-fire range.
- Inspecting and classifying all bridges on the route.
- Locating fords or crossing sites near all bridges on the route (includes determining fordability and locating nearby bypasses that can support combat and CSS units, marking bridge classifications and bypass routes, and being prepared to provide guides to the bypasses).
- Inspecting and classifying all overpasses, underpasses, and culverts.
- Reconning all defiles along the route.
- Locating obstacles along the route. (Cavalry units may be required to clear routes of obstacles. See FM 17-95.)
- Locating bypasses around built-up areas, obstacles, and contaminated areas.
- Reporting route information.
- Finding and reporting all enemy forces that can influence movement along the route.

**TECHNIQUES**

Because of the number of critical tasks that must be accomplished, a scout platoon with an engineer recon team can conduct a detailed recon of only one route. A scout platoon may be able to handle two routes if the recon is limited to trafficability only. The following discussion outlines one technique of accomplishing all tasks as rapidly and securely as possible.

The scout platoon leader receives an order specifying the route the platoon must recon and defining the route from start point (SP) to release point (RP). Additionally, the order may specify platoon boundaries, phase lines (PLs), lines of departure (LDs), and a limit of advance (LOA) or recon objective. These control measures specify how much terrain on both sides of a route that the platoon must recon and where the operation must begin and end. The boundaries are drawn on both sides. They include the terrain that dominates the route, usually extending out 2.5 to 3 kilometers. This ensures that the



scouts recon all terrain that the enemy could use to influence movement along the route. An LD is drawn from one boundary to the other behind the SP. This allows the platoon to cross the LD and be fully deployed before reaching the route. An LOA or objective is placed beyond the RP on the last terrain feature dominating the route or out to about 3 kilometers (see Figure 3-2, page 3-10).

The recon platoon leader may add additional PLs, contact points, and checkpoints to the graphics he receives from his commander. PLs are used to help control the platoon's maneuver. The contact points ensure that the teams maintain contact at particular critical points. Checkpoints are used along a route or on specific terrain to control movement or to designate areas that must be reconned. The engineer recon team leader should obtain this information during the scout platoon OPORD briefing.

The recon platoon leader will also coordinate with the FSO and plan artillery targets on known or suspected enemy positions and on dominant terrain throughout the AO. The engineer recon team leader must ensure that this information is included on his overlay.

The recon platoon leader evaluates the METT-T factors and organizes his platoon with an engineer recon team to meet mission needs. He ensures that at least one team is responsible for reconning a route. A three-team organization is usually the type best suited to recon a route. Team A recons the terrain left of the route, Team B covers the terrain right of the route, and Team C and the engineer recon team recon the route and controls the movement of the other two teams. In this organization, the platoon leader's team has specific responsibility to clear the route (see Figure 3-3, page 3-11). The engineer recon team's tasks will likely include a technical recon of the route (including bridge load classification and possible locations for employing SCATMINES).

#### **EXAMPLE OF A ROUTE RECON**

The following example of a route recon is for a cavalry scout platoon with an engineer platoon attached.

When the scout platoon (with an engineer platoon) conducts a route recon, it often deploys in a V formation because of the mission's focused nature. Team A is positioned to the left of the route, Team B to the right, and Team C (with an engineer platoon) in the center of the zone along Route Saber. The platoon should deploy into the formation before reaching LD Patton so that it crosses the LD at the specified time. The platoon leader reports crossing the LD when the first element crosses it (see Figure 3-4, page 3-12).

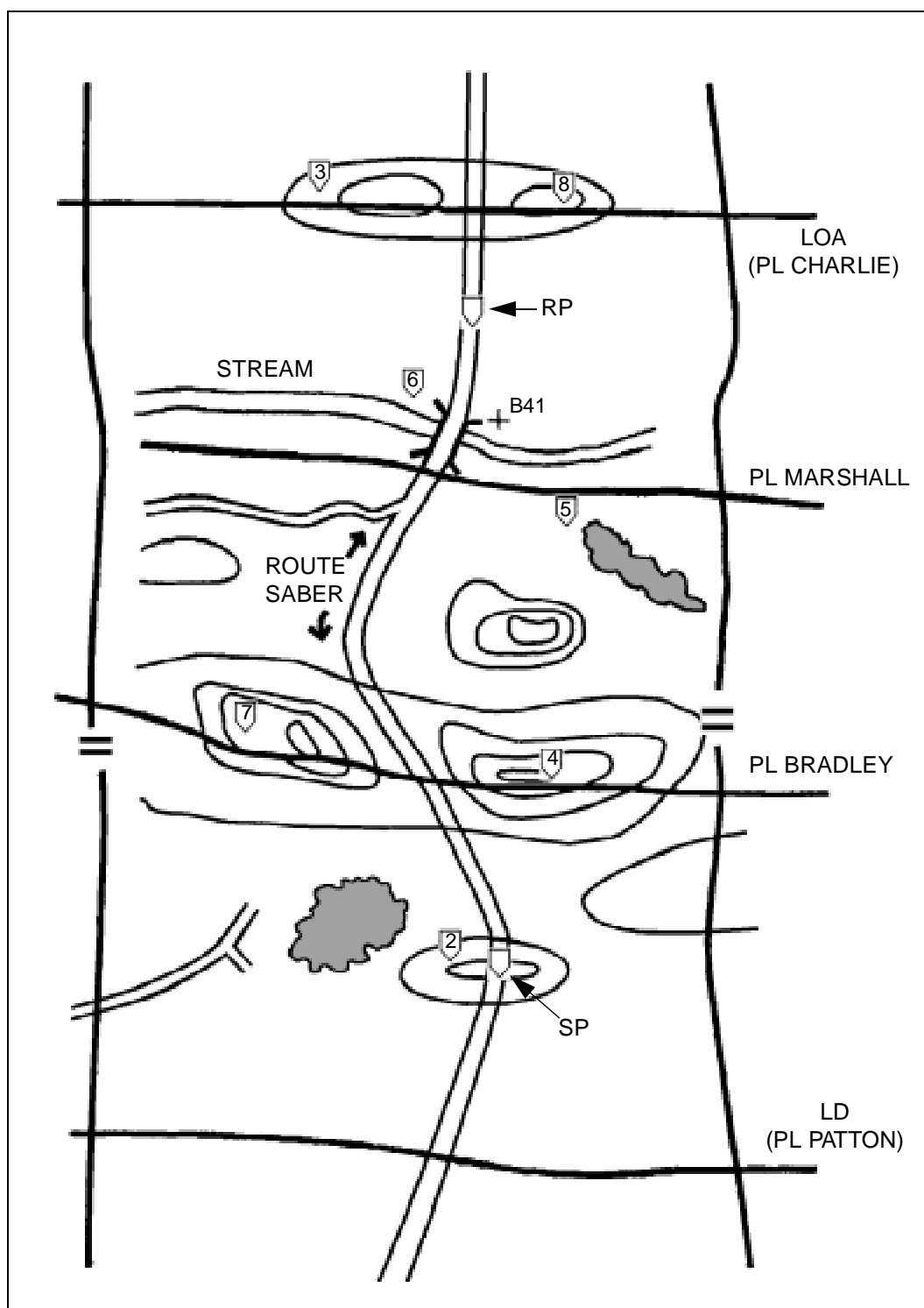
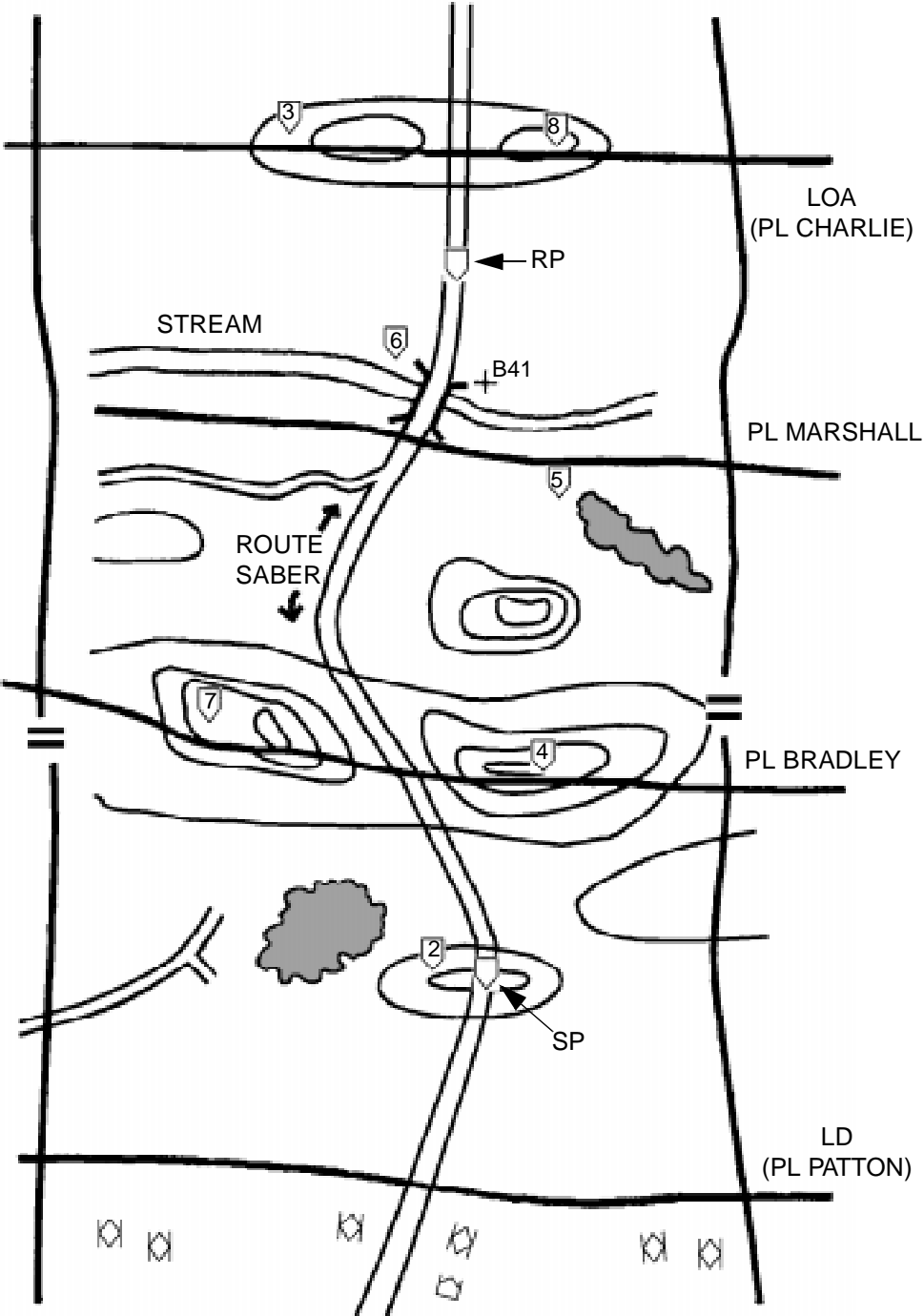


Figure 3-2. Control measures



### Figure 3-3. Conducting a route recon

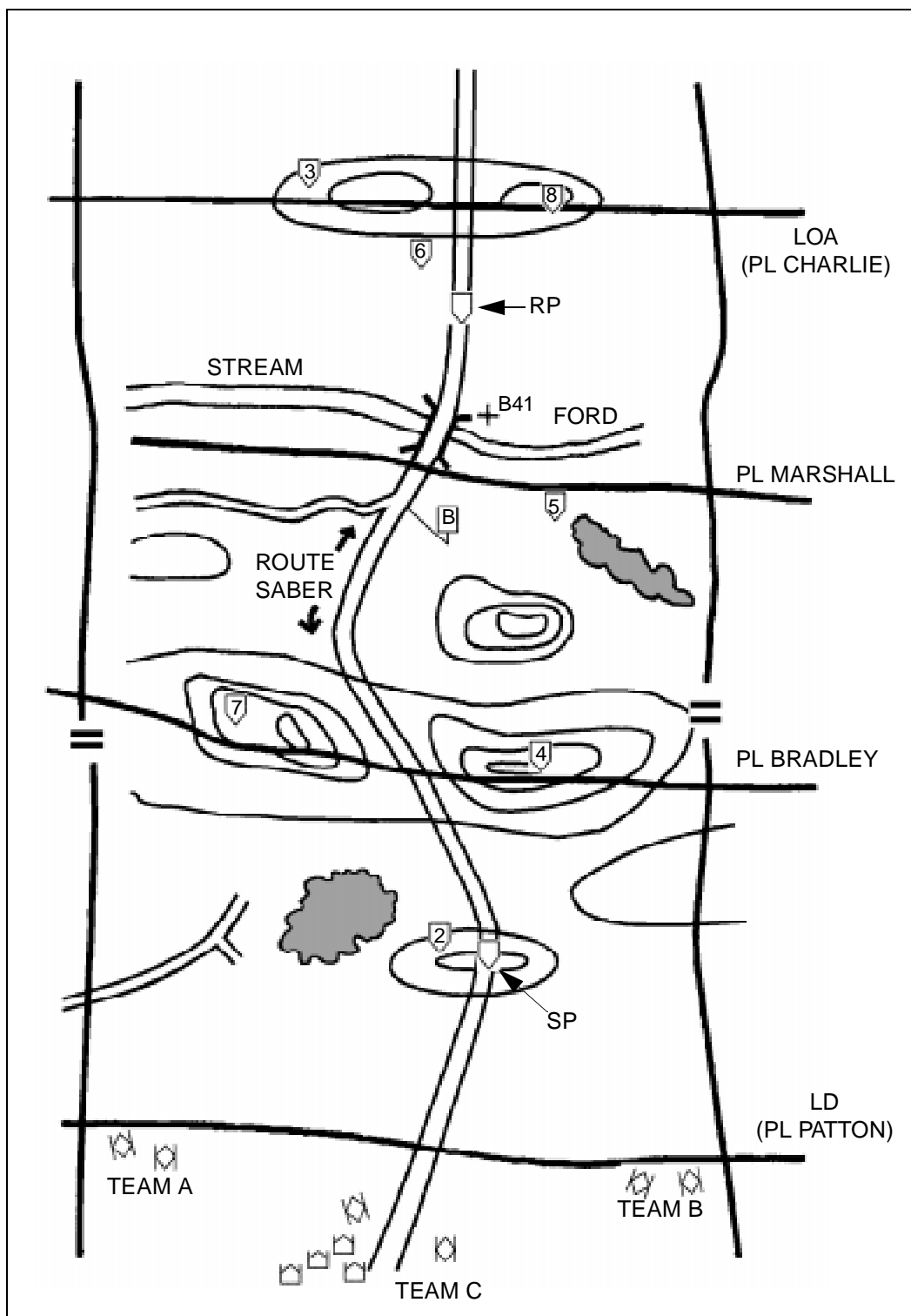


Figure 3-4. Route recon

The scout platoon leader is responsible for movement through the zone. He uses checkpoints to control the movement and to focus on obstacles, key terrain, or features that may influence movement along the route. The engineers focus on obstacles that must be located and cleared. Their efforts must focus on specific PIR to ensure that the recon occurs in a timely manner.

Team C should be positioned along the route so that it can observe the route, and one element of the team must physically drive the entire route. Unless the sector is very small or very open, the platoon will move as individual teams. As the sections move to the checkpoints, they maneuver in a zigzag pattern to clear the sector and accomplish all critical tasks of a route recon. The lead teams on the flanks must observe the route and report any restrictions or obstacles that may restrict movement along the route. Visually clearing the route before Team C travels along it provides for better security and allows Team C to concentrate on the critical recon tasks. As the teams maneuver toward the checkpoints, they maintain visual contact with the route (see Figure 3-5, page 3-14).

After both lead teams report "Set" and are in overwatch positions, Team C begins the route recon (see Figure 3-6, page 3-15). As the platoon leader moves along the route, his wingman maneuvers to provide overwatch for the platoon leader and the engineer platoon. As the engineer platoon leader travels along Route Saber, he is normally required to send a route classification of the trafficability at intervals designated by the commander. A route report may be required only if there is a significant or unexpected change in the route's makeup.

As Team C clears the route, the other teams move ahead, clearing and reconning critical and dominant terrain. The platoon leader controls and coordinates the teams' movements. He must ensure that the flank teams remain far enough forward of Team C to provide security. The flank teams are also assigned responsibility for covering lateral routes. Team A executes a lateral route and uses contact point B to tie with Team C on Route Saber (see Figure 3-7, page 3-16).

The platoon order must address actions on the approach to the stream. In this case, the two flank teams have been given the task of locating bypasses in the form of fords or unmapped bridges. Team B is successful in locating a ford; Team A is not. The engineer platoon sends one squad to checkpoint 5, links up with Team B, and conducts a ford recon. Team B focuses on the steps used for obstacle and restriction recon and continues its mission (see Figure 3-8, page 3-17).

The engineer squad moves back to contact point B and links up with Team C and the rest of the engineer platoon. Team C continues its route recon along the route until it approaches the bridge site. It then executes a bridge recon to establish the bridge's trafficability. Team A occupies an overwatch position while Team C and the engineer platoon recon the bridge. Team B continues its recon one terrain feature beyond the stream and then occupies a short-duration OP (see Figure 3-9, page 3-18).

Team C and the engineer platoon complete their bridge recon and establish local security on the approaches to the bridge's far side. The engineer platoon moves to checkpoint 6 and observes the bridge during the crossing. Once completed, Team A passes across the bridge and through Team C, continuing its recon to clear dominant terrain on the route's left flank (see Figure 3-10, page 3-19). Once Team A is set, the platoon resumes its route recon to the LOA (see Figure 3-11, page 3-20).

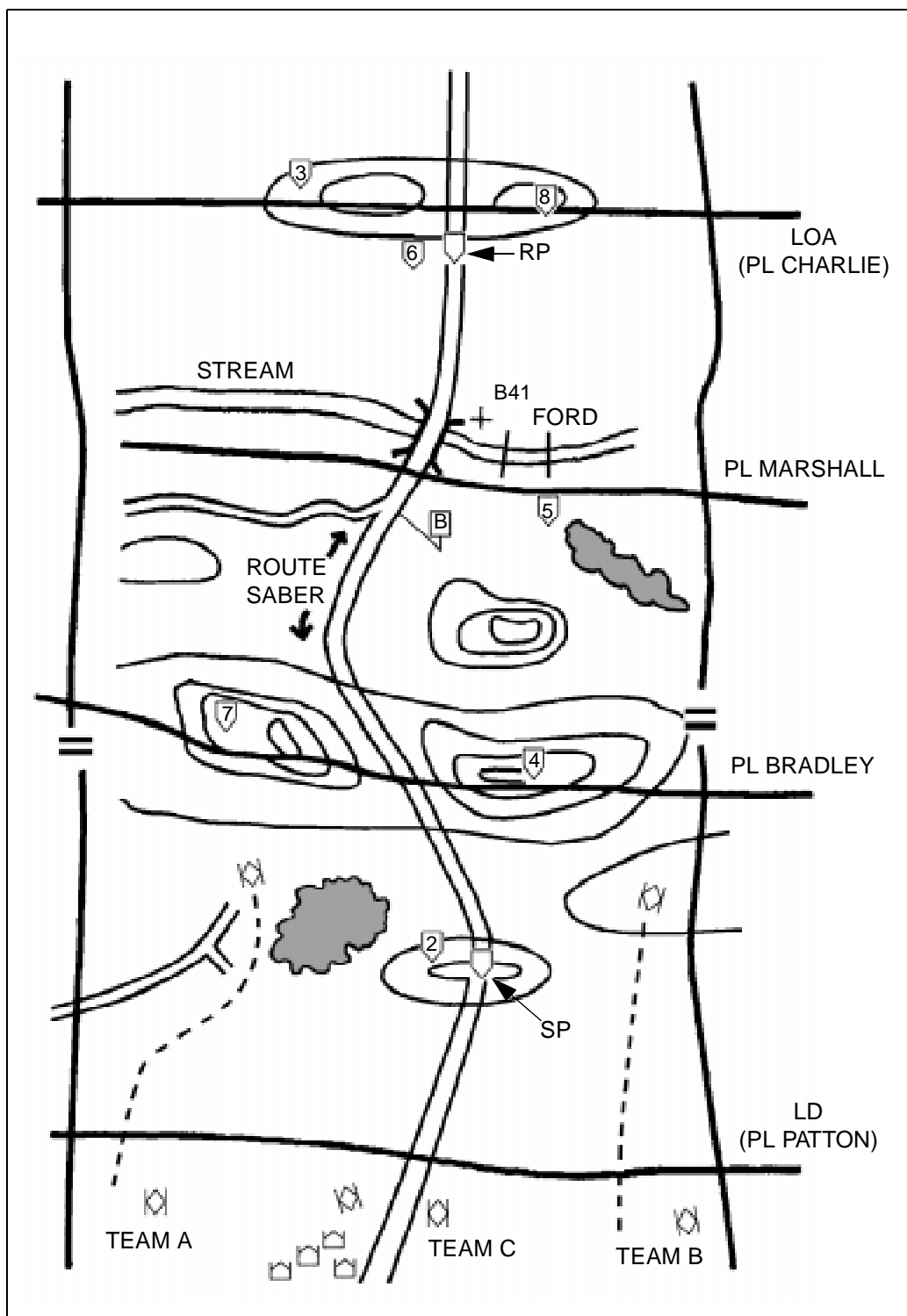


Figure 3-5. Route recon (continued)

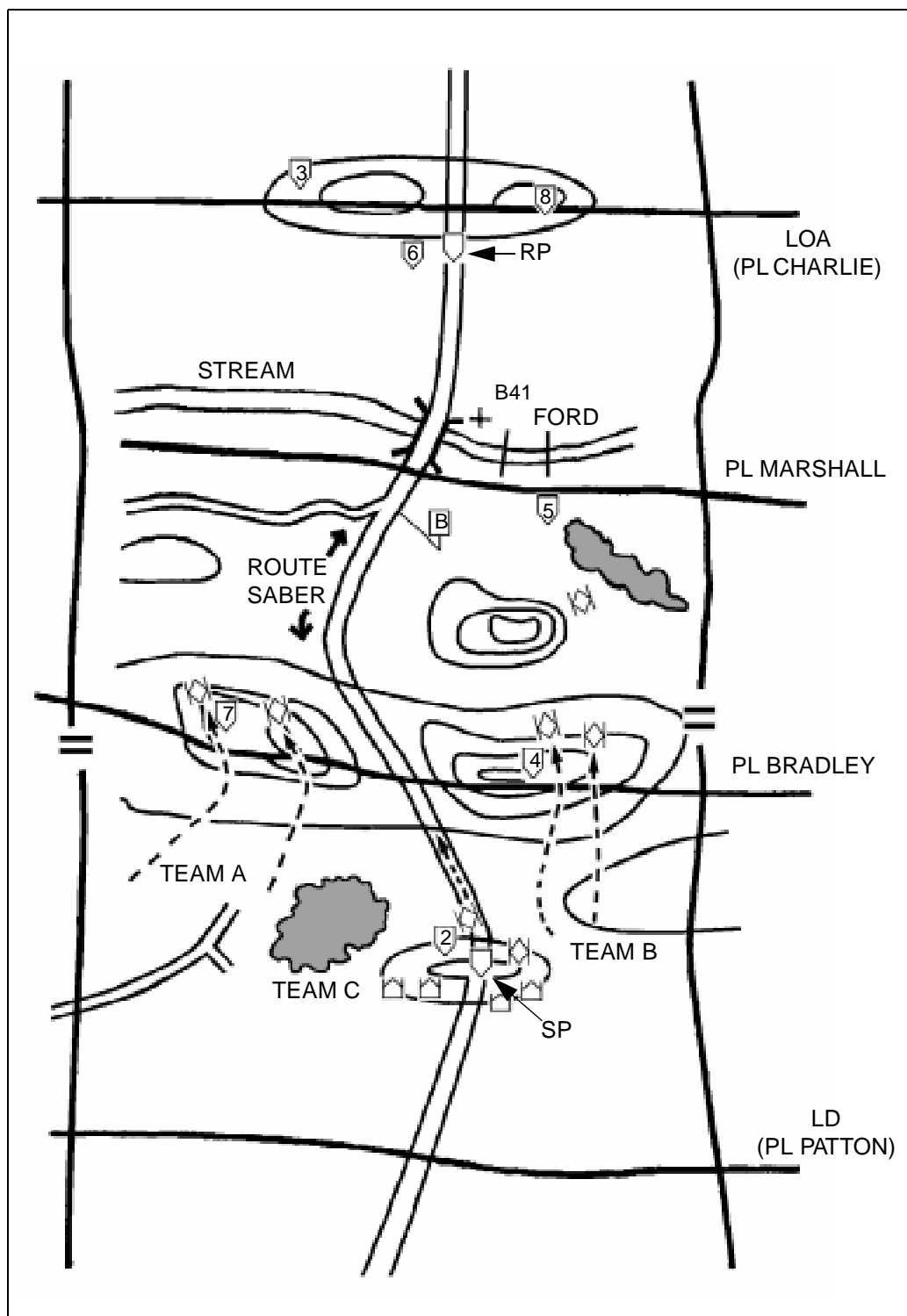
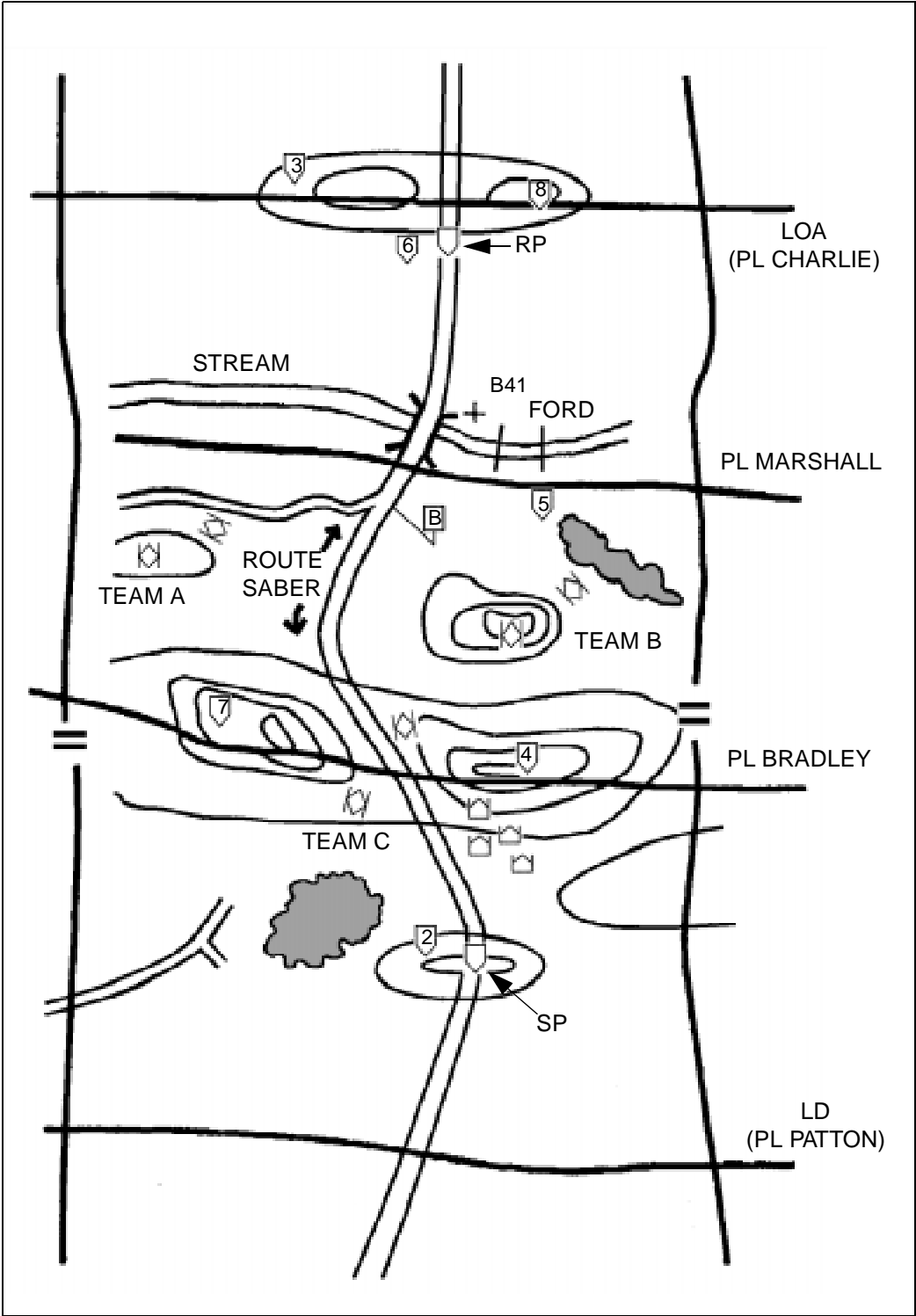


Figure 3-6. Team C begins route recon



**Figure 3-7. Team A executes lateral route**



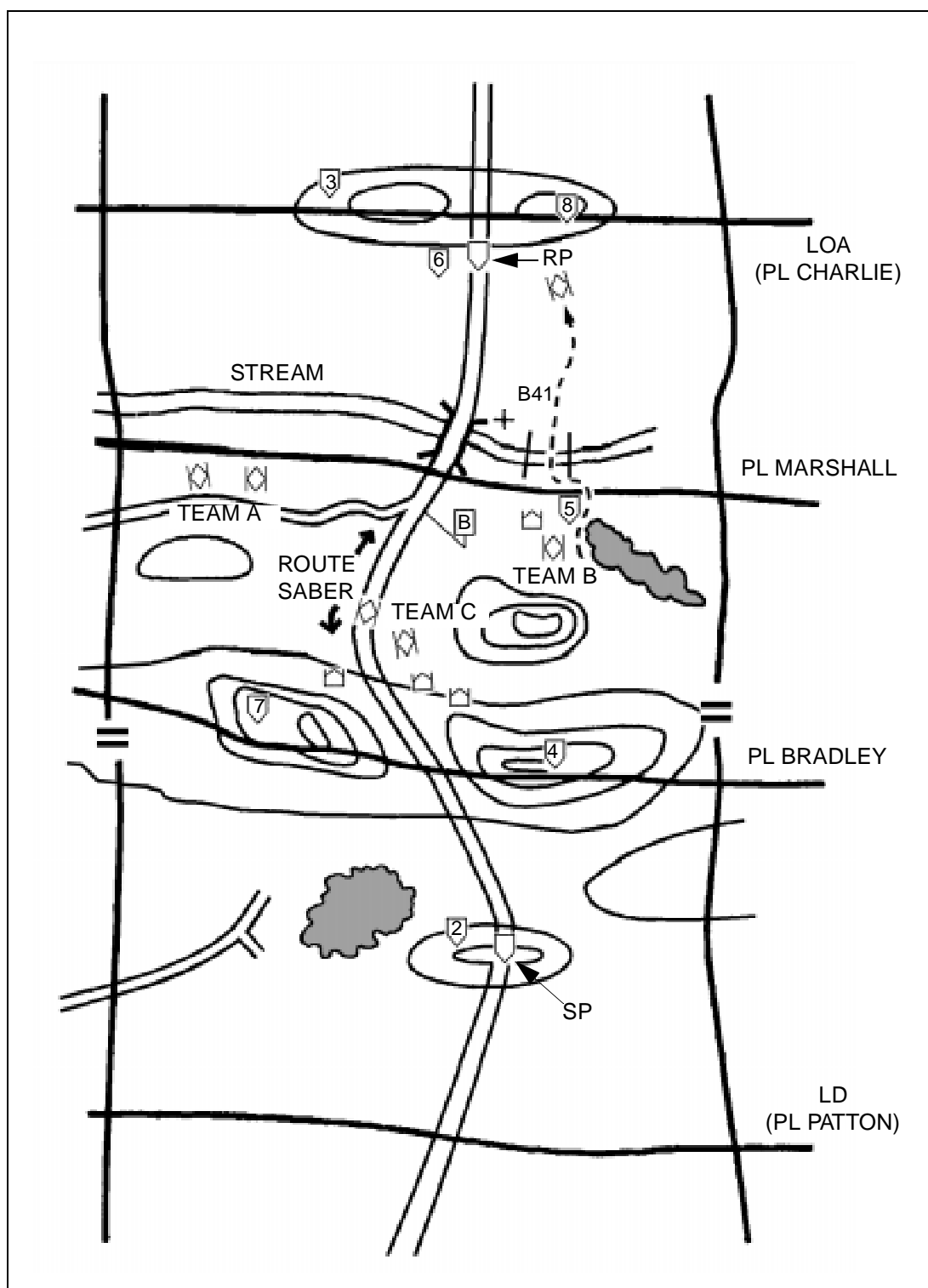


Figure 3-8. Team B (with engineers) conducts ford recon

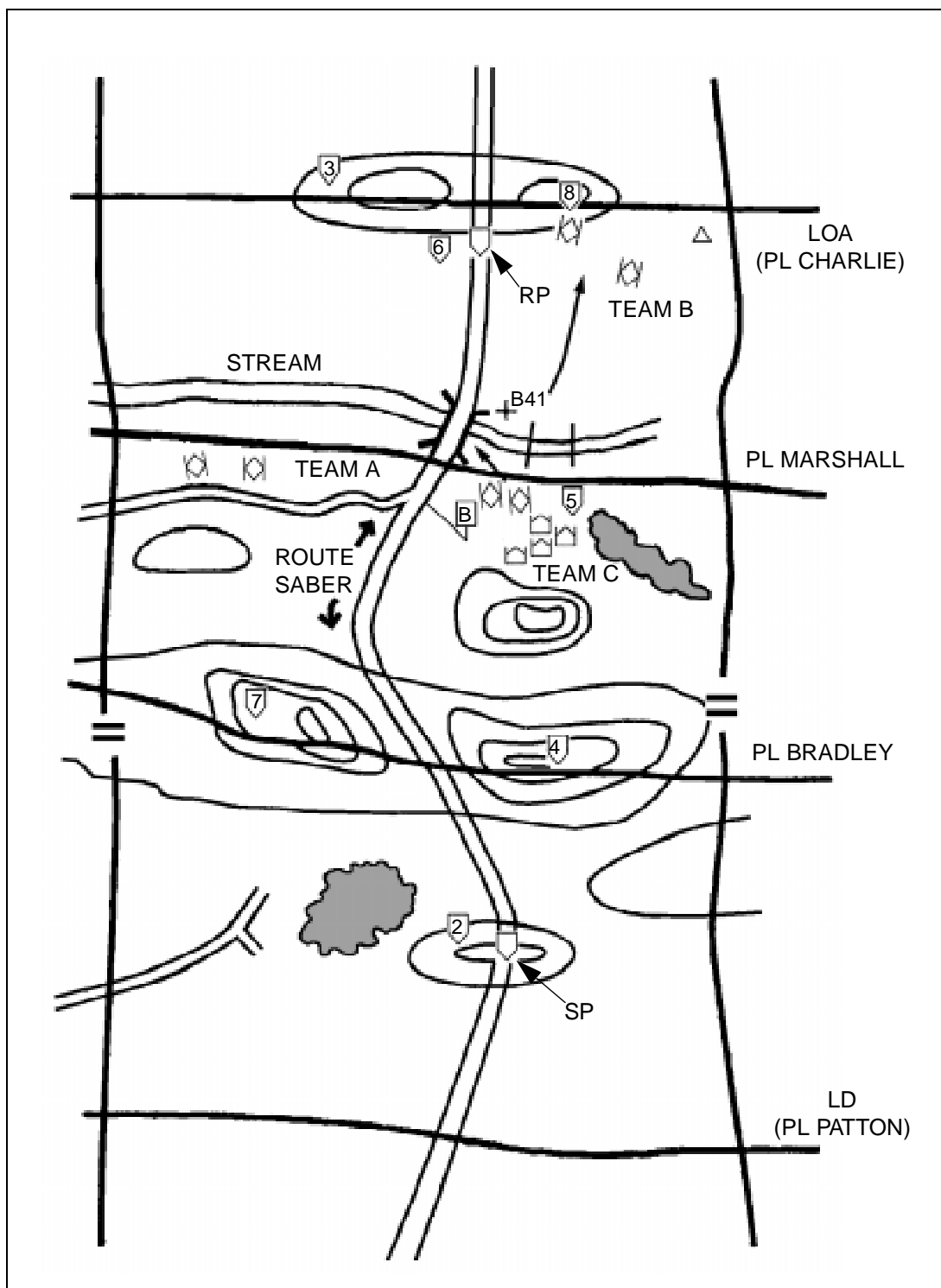


Figure 3-9. Team C (with engineers) conducts bridge recon

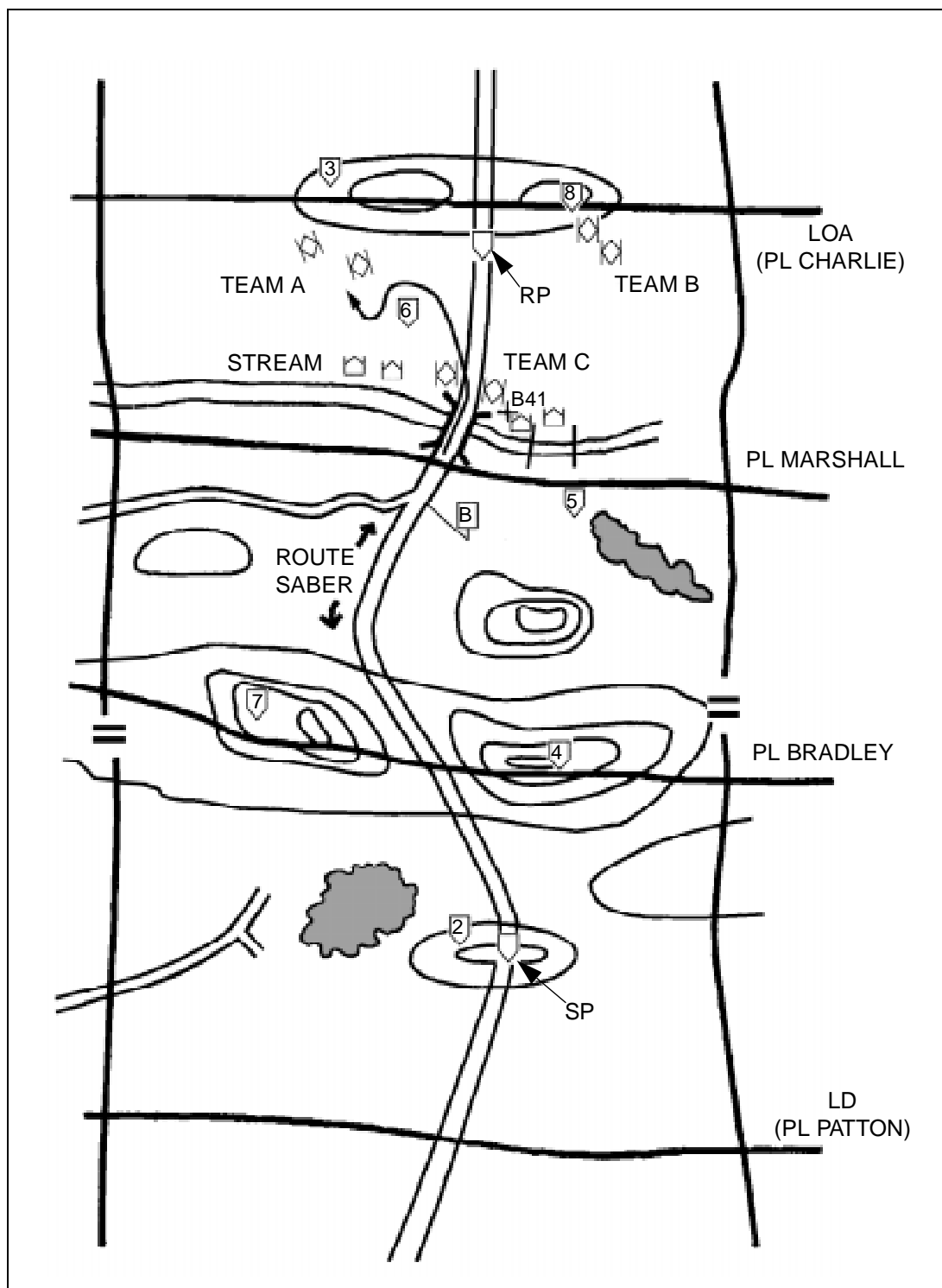


Figure 3-10. Team A crosses the bridge

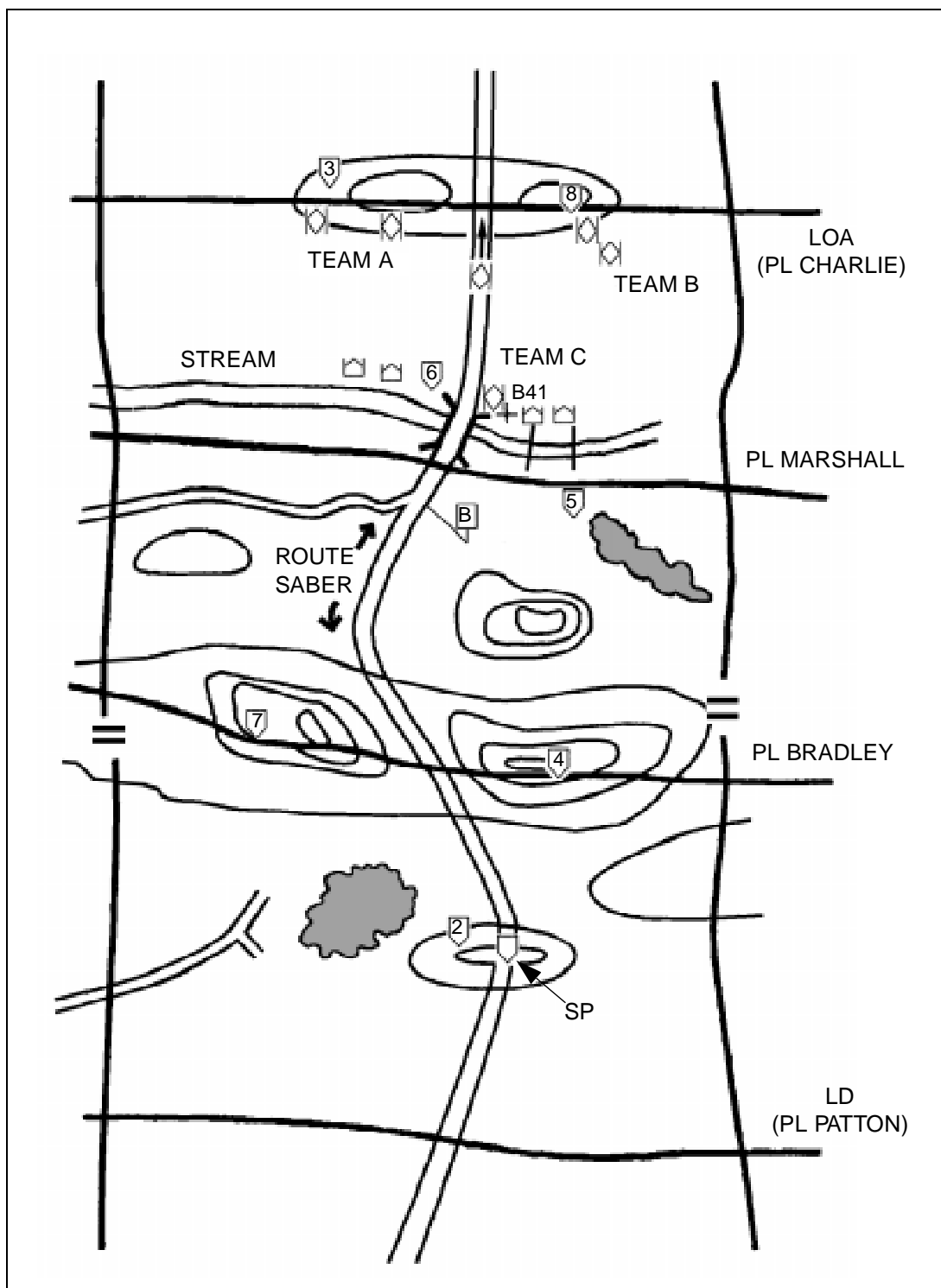


Figure 3-11. Team C moves to recon LOA

## ZONE RECON

Maneuver units and scouts, with the assistance of engineers, conduct zone recon missions to gain detailed information about routes, terrain, resources, and enemy forces within a zone defined by lateral boundaries. Commanders normally assign a zone recon mission when they need information before sending their main-body forces through the zone. The recon produces information about the enemy situation and about routes and cross-country trafficability within the zone. Engineers play a primary role in obtaining route and cross-country trafficability information. This is the most thorough and complete recon mission; therefore, it is very time intensive. It is common for scouts executing a zone recon with engineer assistance to advance at only 1.5 kilometers per hour.

### CRITICAL TASKS

During a zone recon, a recon element must accomplish a specified number of tasks unless directed to do otherwise. The recon leader must clearly understand which of the following critical tasks must be accomplished:

- Reconning key terrain in the zone.
- Inspecting and classifying all key bridges within the zone.
- Locating suitable fording or crossing sites near all bridges within the zone.
- Inspecting and classifying all overpasses, underpasses, and culverts.
- Locating obstacles in the zone; determining how to reduce obstacles (assets and time) when needed. (Cavalry units may be required to clear the zone of obstacles. See FM 17-95.)
- Locating bypasses around built-up areas, obstacles, and contaminated areas.
- Reporting enemy forces in the zone.
- Reporting recon information.

### TECHNIQUES

A zone recon is a very time-consuming operation. Unless the orders specify otherwise, all critical tasks listed above are implied in the zone recon mission statement. Commanders who want a faster tempo of operations need to modify the mission statement and ensure that the recon element knows what its primary recon tasks are. For example, the TF commander may have critical bridges that need classification to ensure that the main body can move with freedom. However, he may have two other bridges within the zone that will not be used by the TF and do not need to be classified.

Mounted maneuver units and TF scouts with engineers can effectively recon a zone that is 3 to 5 kilometers wide. The zone's width is determined by the road network, terrain features, anticipated enemy activity, and time available to accomplish the mission. If the zone is wider than 3 to 5 kilometers, the recon element quickly loses the capability to accomplish the critical tasks and move securely.